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**ENGINE OIL SYSTEM WITH OIL PRESSURE REGULATOR TO  
INCREASE CAM PHASER OIL PRESSURE**

**ABSTRACT OF THE DISCLOSURE**

- A lubrication system for an internal combustion engine having a pressure regulator to optimize oil flow through an engine to increase engine efficiency. The lubrication system includes an engine driven oil pump connected to supply pressurized oil through a main oil feed to a main bearing gallery, a cam gallery and a hydraulically actuated device such as a cam phaser or switching valve lifters. A pressure regulator connected between the main oil feed and the galleries selectively restricts oil flow to the galleries to raise oil pressure supplied to the hydraulically actuated device.
- 5      The increased oil pressure to the cam phaser allows the engine to use a smaller oil pump and thereby increase engine efficiency while providing for actuation of the cam phaser over the full engine speed range. The increased oil pressure to the switching lifters allows the engine to reduce valve lift or disable cylinders over the full engine speed range.
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